

three inches = one foot  
one and one half inches = one foot  
one inch = one foot  
three quarters inch = one foot  
one half inch = one foot  
three eighths inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot

WIRING DEVICES	
	20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 24" AFF UNLESS OTHERWISE NOTED.
	DOUBLE 20A-125V, HOSPITAL GRADE, GROUNDED DUPLEX RECEPTACLE, MOUNT AT 24" AFF UNLESS OTHERWISE NOTED.
	20A-125V, HOSPITAL GRADE, GROUND FAULT INTERRUPTER RECEPTACLE, MOUNT AT 24" AFF UNLESS OTHERWISE NOTED.
	SAME DEVICE TYPES AS INDICATED ABOVE EXCEPT CONNECTED TO EMERGENCY CRITICAL CIRCUIT.

WIRING TERMINATIONS	
	JUNCTION BOX, CEILING OR WALL MOUNTED, 4" SQ. WITH GROUND LUG, UNLESS OTHERWISE NOTED. SC - SINK STATION CONTROLS, CONNECT PER MANUFACTURES WIRING DIAGRAM. EWC - ELECTRIC WATER COOLER.
	MOTOR - NUMBER DENOTES HORSEPOWER

TELECOMMUNICATIONS SYSTEM LEGEND	
	TELECOMMUNICATIONS OUTLET "TCO", PROVIDE THE FOLLOWING PER TCO - 6"SQ x 2.5" DEEP BOX WITH 4-PORT COVERPLATE. - PROVIDE 1" MINIMUM CONDUIT WITH PULLWIRE. TERMINATE ALL OUTLET CONDUITS ABOVE CABLE TRAY AND PROVIDE GROUNDING BUSHING WITH #6 COPPER CONNECTION TO CABLE TRAY. - PROVIDE (# QUANTITY) DATA JACK MODULES AND CAT6 CABLES TERMINATED TO NEAREST IRM ROOM.

POWER DISTRIBUTION EQUIPMENT (FLOOR PLAN VIEW)	
	208/120V-3ø-4W PANELBOARD UNLESS OTHERWISE NOTED. MOUNT AT 78" AFF TO TOP OF PANEL.
	480/277V-3ø-4W PANELBOARD UNLESS OTHERWISE NOTED. MOUNT AT 78" AFF TO TOP OF PANEL.
	GENERAL PURPOSE, 3 PHASE DRY-TYPE TRANSFORMER.
	FUSED DISCONNECT SWITCH - SIZE AND TYPE AS NOTED. PROVIDE CLASS RK1 FUSES UNLESS OTHERWISE NOTED. NEMA 1 ENCLOSURE UNLESS OTHERWISE NOTED.

MOTOR AND MOTOR CONTROLLERS (FLOOR PLAN VIEW)	
	COMBINATION CIRCUIT BREAKER/MAGNETIC MOTOR STARTER 12"WX16"HX8"D MAXIMUM DIMENSIONS (REFER TO SPECIFICATIONS 262911) AND MINIMUM NEMA SIZE 0 CONTACTS AND NEMA 1 ENCLOSURE, UNLESS OTHERWISE NOTED. PROVIDE (2) AUX. CONTACTS, UNLESS OTHERWISE NOTED.
	VARIABLE SPEED MOTOR CONTROLLER - (REFER TO SPECIFICATIONS SECTION 262911).
	120V-1ø OR 277V-1ø (AS REQUIRED) MANUAL MOTOR STARTER WITH INTEGRAL OVERLOAD PROTECTION
	120V-1ø OR 277V-1ø (AS REQUIRED) MOTOR STARTER COMPLETE WITH INTEGRAL OVERLOAD PROTECTION AND "HAND-OFF-AUTO" SELECTOR SWITCH.
	120V-1ø OR 277V-1ø (AS REQUIRED) LOCKABLE MANUAL SWITCH (NO THERMAL OVERLOADS).

BRANCH CIRCUIT WIRING	
	BRANCH CIRCUIT HOME RUN TO PANEL - ARROWHEADS INDICATE CIRCUITS. WIRE INDICATED ARE GREEN GROUND, SEPARATE NEUTRALS (SHARED NEUTRALS ARE NOT PERMITTED FOR BRANCH CIRCUITS) AND THREE HOT LBS (A DIFFERENT PHASE FOR EACH CIRCUIT) MAXIMUM THREE CIRCUITS PER CONDUIT. 3/4" MINIMUM CONDUIT WITH WIRE SIZE INDICATED ON DRAWING ("XX" INDICATES AWG SIZE). ALL POWER WIRING SHALL BE STRANDED COPPER CONDUCTORS WITH THHN/THWN INSULATION. PROVIDE SEPARATE EQUIPMENT GROUNDING CONDUCTOR (SAME SIZE AS PHASE AND NEUTRAL, UNLESS OTHERWISE NOTED) FOR EACH CONDUIT. CONDUIT WIRE FILLS SHALL BE IN ACCORDANCE WITH LATEST NATIONAL ELECTRIC CODE.

GENERAL LEGEND	
	CODED NOTE - "1" INDICATES NOTE NUMBER.
	MECHANICAL EQUIPMENT IDENTIFIER
	DETAIL REFERENCE - "1" INDICATES DETAIL NUMBER, "1-E01" INDICATED DRAWINGS NUMBER.
	COLUMN GRID
	REVISION REFERENCE NUMBER

GENERAL NOTES	
1.	ALL MOUNTING HEIGHTS ARE TO CENTER OF DEVICE UNLESS OTHERWISE NOTED.
2.	ALL NEW WALL MOUNTED ELECTRICAL DEVICES ARE TO BE INSTALLED FLUSH IN WALL UNLESS OTHERWISE NOTED. ALL ELECTRICAL CONDUIT SHALL BE CONCEALED BEHIND FINISHED WALLS AND ABOVE FINISHED CEILING UNLESS OTHERWISE NOTED. THE COST TO CUT AND PATCH WALLS SHALL BE THE RESPONSIBILITY OF THE TRADE REQUIRING THE CUTTING.
3.	ELECTRICAL CONTRACTOR IS RESPONSIBLE FOR REMOVAL AND REPLACEMENT OF CEILINGS REQUIRED FOR ELECTRICAL WORK. ELECTRICAL CONTRACTOR SHALL REPLACE ANY DAMAGED CEILING TILES.
4.	PRIOR TO INSTALLATION, VERIFY PRECISE LOCATION OF NEW OR RELOCATED WALL OR CEILING MOUNTED DEVICES WITH ARCHITECTURAL ELEVATIONS AND REFLECTED CEILING PLANS.
5.	COORDINATE ALL SHUT-DOWNS OF EXISTING ELECTRICAL SYSTEMS WITH OWNER A MINIMUM OF SEVEN WORKING DAYS IN ADVANCE. ALL SHUT-DOWNS SHALL OCCUR DURING WEEKENDS OR UNOCCUPIED TIMES, INCLUDE ALL PREMIUM TIME CHARGES IN BID.
6.	ALL NOISE GENERATING OPERATIONS, INCLUDING CUTTING OF CEILINGS, WALLS AND FLOORS, CORING, DRILLING, ETC. SHALL BE SCHEDULED ON WEEKENDS OR BETWEEN 8:00PM AND 7:00AM ON WEEKDAYS. INCLUDE ALL PREMIUM TIME CHARGES IN BID.
7.	ELECTRICAL CONTRACTOR SHALL CONNECT ALL MECHANICAL EQUIPMENT COMPLETE PER MANUFACTURER'S WIRING DIAGRAMS AND INSTRUCTIONS. COORDINATE WITH MECHANICAL CONTRACTOR AND VERIFY LOCATION, VOLTAGE, AMPS, NO. OF WIRES, AND PROTECTION REQUIREMENTS PRIOR TO ROUGH-IN. CONTACT ENGINEER WITH ANY DISCREPANCIES FROM DESIGN DRAWINGS.
8.	PROVIDE LIQUID-TIGHT FLEXIBLE METAL CONDUIT FOR FINAL CONNECTION TO MECHANICAL EQUIPMENT OR OTHER EQUIPMENT WHICH MAY PROPAGATE VIBRATION.
9.	ALL WORK SHALL BE PERFORMED IN STRICT CONFORMANCE WITH THE PHASING REQUIREMENTS OF THE PROJECT. ALL COSTS ASSOCIATED WITH THESE REQUIREMENTS SHALL BE INCLUDED IN THE BID SUBMITTAL.
10.	DEFINITION: "PROVIDE" - FURNISH, INSTALL AND CONNECT COMPLETE.

WALL TYPE LEGEND	
	INDICATES EXISTING CONSTRUCTION
	INDICATES DEMOLITION
	INDICATES NEW CONSTRUCTION

ABBREVIATIONS	
AC	ABOVE COUNTER AT 9" UNLESS OTHERWISE NOTED
AF	AMP FRAME
AFC	ABOVE FINISHED CEILING
AFF	ABOVE FINISHED FLOOR
AT	AMP TRIP
ATS	AUTOMATIC TRANSFER SWITCH
BC	BELOW COUNTER AT 18" AFF UNLESS OTHERWISE NOTED
BFC	BELOW FINISHED CEILING
CM	CEILING MOUNTED
EC	ELECTRICAL CONTRACTOR
EG	EQUIPMENT GROUND
EWC	ELECTRIC WATER COOLER
GC	GENERAL CONTRACTOR
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
IG	ISOLATED GROUND
MC	MECHANICAL CONTRACTOR
MLO	MAIN LUGS ONLY
NEC	NATIONAL ELECTRICAL CODE
NF	NOT FUSED
NIC	NOT IN CONTRACT
OFE	OWNER FURNISHED EQUIPMENT
TC	TELECOMMUNICATIONS CONTRACTOR
TCC	TEMPERATURE CONTROLS CONTRACTOR
VFD	VARIABLE FREQUENCY DRIVE
WP	WEATHERPROOF ENCLOSURE - NEMA 4 TYPE
X	EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, CONDUIT, ETC. - TO REMAIN
XB	INDICATES EXISTING OUTLET, LIGHTING FIXTURE, CONDUIT, ETC - TO BE REMOVED. PROVIDE BLANK COVER FOR OUTLET AND MAINTAIN CIRCUIT CONTINUITY.
XL	NEW LOCATION OF EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC.
XN	EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. - TO BE REPLACED WITH NEW OF SPECIFIED TYPE
XR	EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, CONDUIT, ETC. - TO BE REMOVED COMPLETE- MAINTAIN CIRCUIT CONTINUITY TO ADJACENT OUTLETS, EXTEND CONDUIT AND WIRING AS REQUIRED.
XRR	EXISTING OUTLET, DEVICE, LIGHTING FIXTURE, ETC. - TO BE REMOVED AND REINSTALLED AT NEW LOCATION - EXTEND CONDUIT AND WIRING AS REQUIRED
VAMC	VETERAN AFFAIRS MEDICAL CENTER

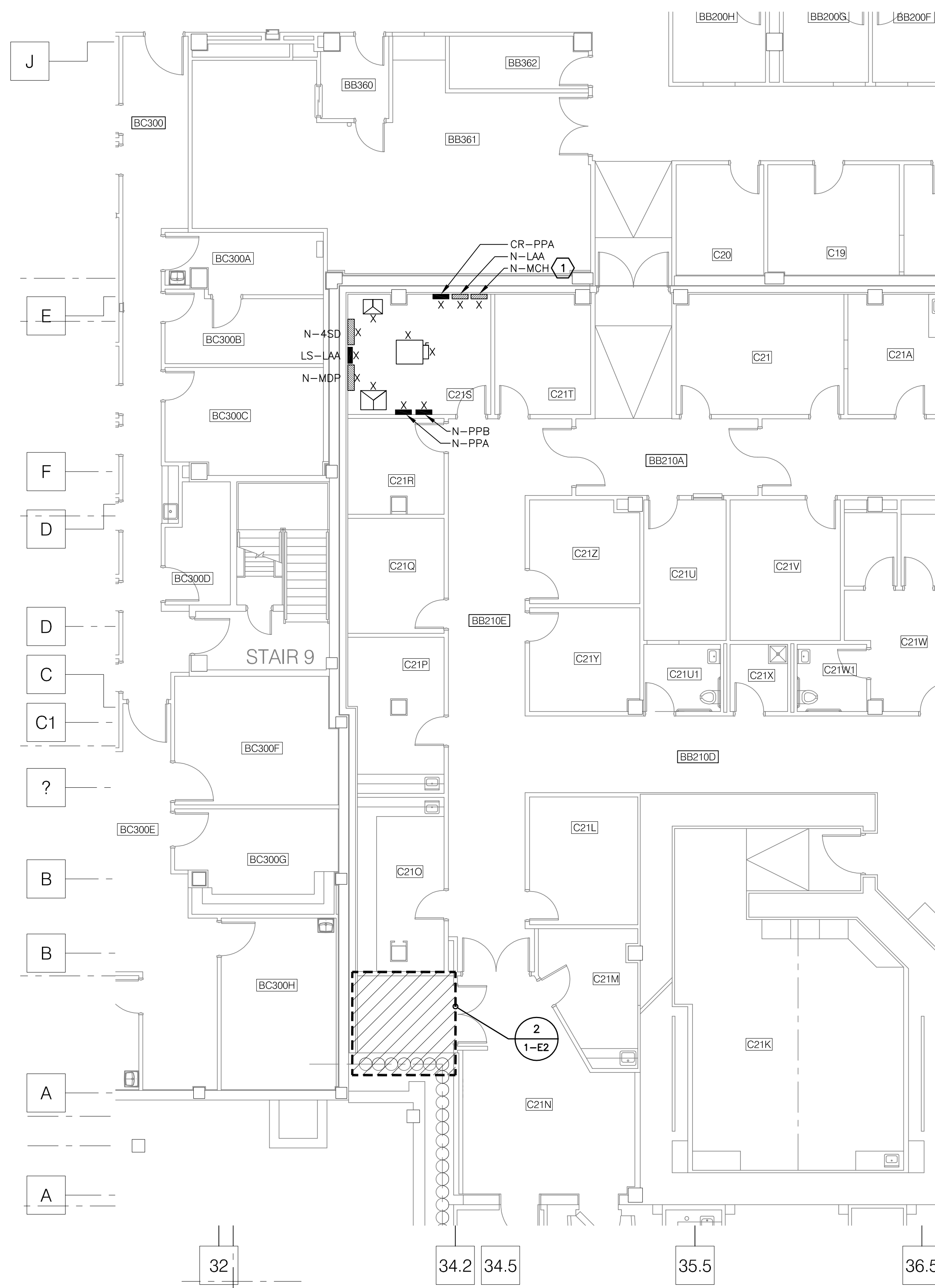
STATEMENT OF BID ITEMS:	
<b>BID ITEM 1. (BASE BID):</b> PROVIDE PROCESS LOOP TIE-INS: WORK INCLUDES GENERAL CONSTRUCTION, ALTERATIONS, MECHANICAL, AND ELECTRICAL WORK AS INDICATED ON DRAWINGS AND IN SPECIFICATIONS. GENERAL SCOPE OF WORK IS TO EXTEND PROCESS CHILLED WATER SERVICE TO AREAS AND EQUIPMENT LOCATED THROUGHOUT THE FACILITY.	
<b>BID ITEM 2. (DEDUCT ALTERNATE NO. 1):</b> 1. SAME AS BID ITEM 1 (BASE BID) EXCEPT DELETE DEMOLITION AND NEW WORK ASSOCIATED WITH LINEAR ACCELERATOR #2 PROCESS LOOP TIE-IN 2. DEMOLITION AND NEW WORK ASSOCIATED WITH LINEAR ACCELERATOR #1 SHALL BE COMPLETED WITH VALVED/CAPPED PROCESS CHILLED WATER PIPING FOR FUTURE CONNECTION TO LINEAR ACCELERATOR #2 SYSTEM. 3. REFER TO MECHANICAL AND ELECTRICAL DRAWINGS FOR ADDITIONAL INFORMATION.	
<b>BID ITEM 3. (DEDUCT ALTERNATE NO. 2):</b> 1. SAME AS BID ITEM 2 (DEDUCT ALTERNATE NO. 1) EXCEPT ALSO DELETE NEW PROCESS CHILLED WATER PIPING FROM SUB-BASEMENT TO FIRST FLOOR MECHANICAL ROOM 107. 2. REFER TO MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION.	

FOR CONSTRUCTION

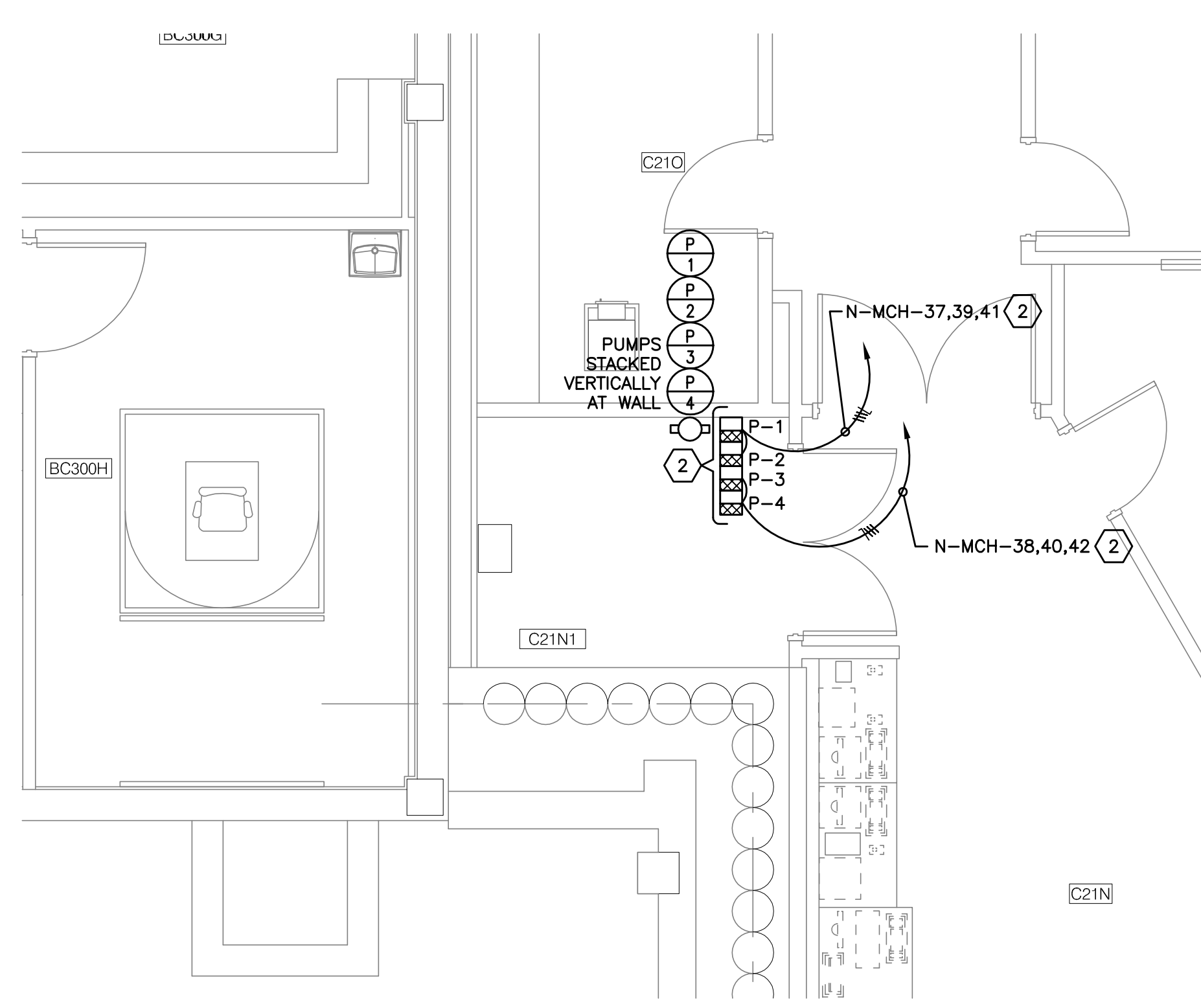
Final Construction Documents	04-03-15	<b>CONSULTANTS:</b>		<b>ARCHITECT/ENGINEER:</b>  FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL. (440) 546-9888 FAX (440) 546-9899	Drawing Title <b>ELECTRICAL LEGEND</b>	Project Title <b>PROVIDE PROCESS LOOP TIE-INS</b>	Project Number 541-15-203	<b>Office of Facilities Management</b> 	
					Location <b>VAMC - WADE PARK</b>	Building Number 1			
					Date 04-03-15	Checked <b>MPL</b>	Drawn <b>TWM</b>		Drawing Number <b>1-E1</b>
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Revisions:	Date								

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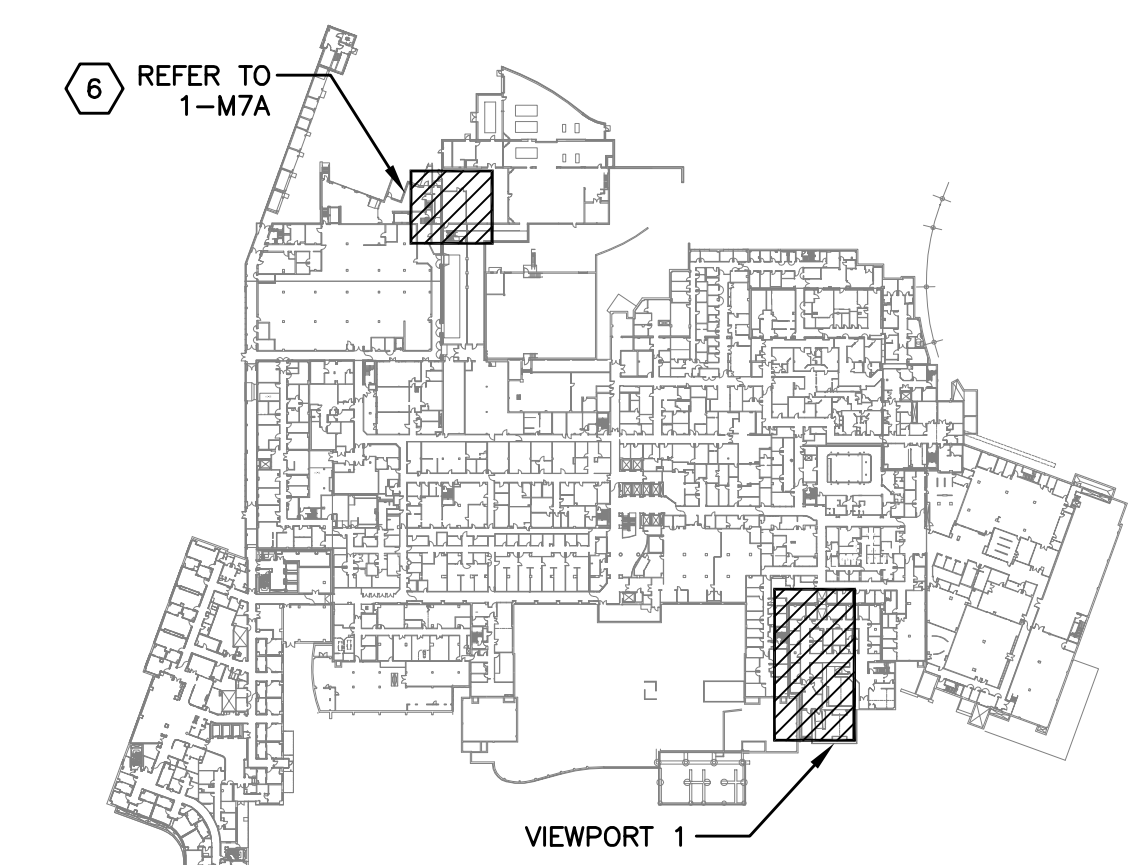
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one inch = one foot  
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three eighths inch = one foot  
one quarter inch = one foot  
one eighth inch = one foot  
one eighth inch = one foot



PARTIAL BASEMENT POWER PLAN  
SCALE: 1/8" = 1'-0"  
1



ENLARGED RM C21N1  
POWER PLAN  
SCALE: 1/4" = 1'-0"  
2



BASEMENT KEY PLAN  
NOT TO SCALE  
3

**CODING NOTES:**

1 PROVIDE (2) NEW 15A-3P BREAKERS WITH SHORT CIRCUIT RATING TO MATCH EXISTING IN PANEL N-MCH FOR INLINE PUMPS 1-4. REFER TO ENLARGED RM C21N PLAN ON THIS DWG.

2 PROVIDE CONNECTION TO NEW PUMPS COMBINATION MOTOR STARTERS AS INDICATED. PROVIDE CONNECTION FROM MOTOR STARTER TO PUMPS. ROOM WILL BE CROWDED. FIELD COORDINATE EXACT MOUNTING LOCATIONS OF STARTERS WITH ALL TRADES PRIOR TO ROUGH-INS.

3 REFER TO DRAWING 1-M7A CODED NOTE 6 FOR ADDITIONAL WORK REQUIREMENTS. REMOVE AND RELOCATE EXISTING WALL MOUNTED LIGHT FIXTURE IN PATH OF NEW PIPING. REWORK/EXTEND CONDUIT AND WIRING TO NEW LOCATION.

**DEDUCT ALTERNATE NOTES**

AS PART OF DEDUCT ALTERNATE #1:

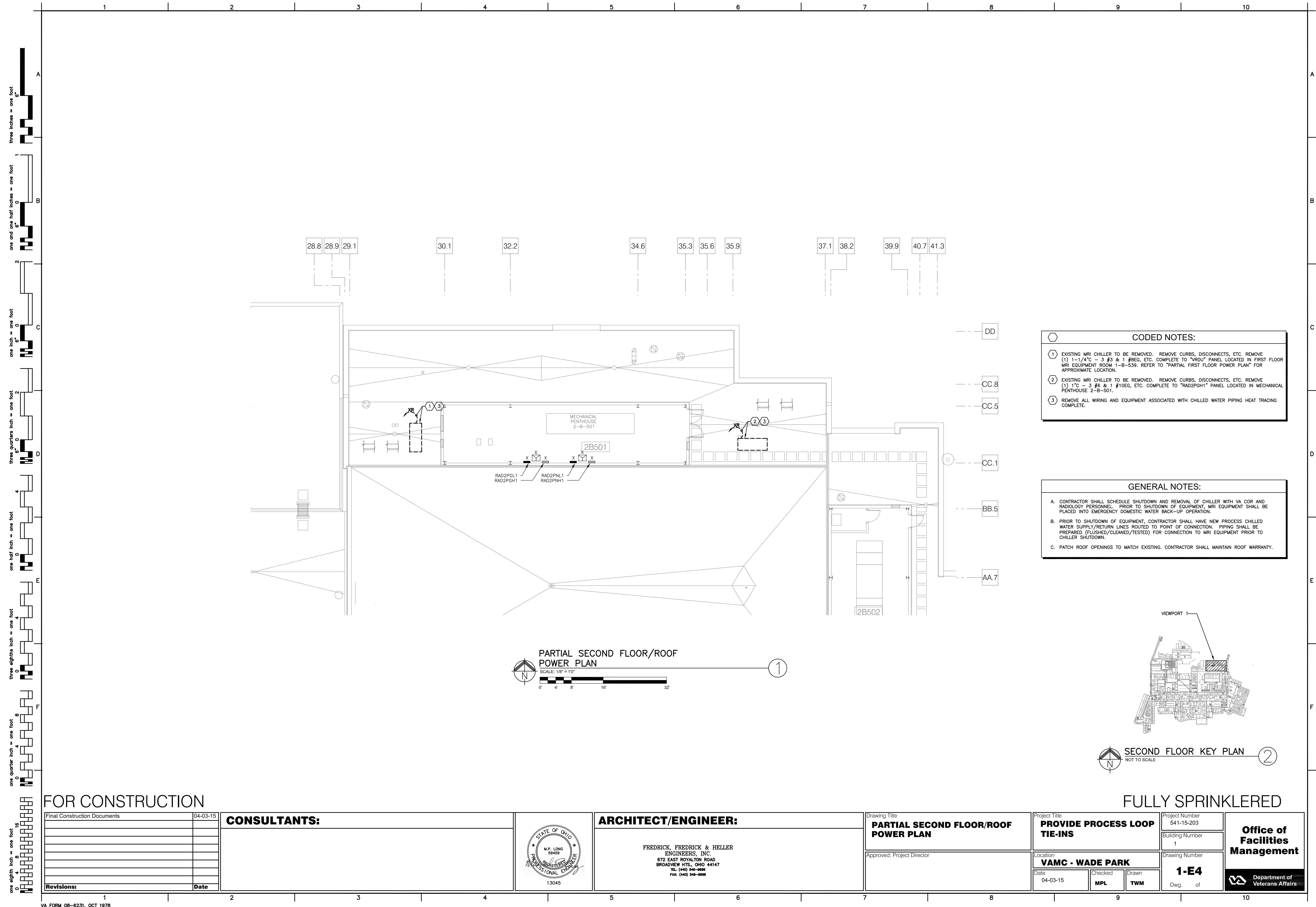
A. DELETE ALL DEMOLITION AND NEW WORK SERVING LINEAR ACCELERATOR #2 CABINET. THIS INCLUDES ALL CIRCUITS, BREAKERS AND COMBINATION MOTOR STARTERS ASSOCIATED WITH PUMPS P-3 AND P-4.

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					Location <b>VAMC - WADE PARK</b>	Building Number 1			
					Date 04-03-15	Checked MPL	Drawn TWM		Drawing Number <b>1-E2</b>
									Dwg. of
Revisions:	Date								






- CODED NOTES:**
- 1 EXISTING MRI CHILLER TO BE REMOVED. REMOVE CURBS, DISCONNECTS, ETC. REMOVE (1) 1-1/4" - 3 #3 & 1 #8EG, ETC. COMPLETE TO "VRDU" PANEL LOCATED IN FIRST FLOOR MRI EQUIPMENT ROOM 1-B-539. REFER TO "PARTIAL FIRST FLOOR POWER PLAN" FOR APPROXIMATE LOCATION.
  - 2 EXISTING MRI CHILLER TO BE REMOVED. REMOVE CURBS, DISCONNECTS, ETC. REMOVE (1) 1" - 3 #6 & 1 #10EG, ETC. COMPLETE TO "RAD2PGH1" PANEL LOCATED IN MECHANICAL PENTHOUSE 2-B-501.
  - 3 REMOVE ALL WIRING AND EQUIPMENT ASSOCIATED WITH CHILLED WATER PIPING HEAT TRACING COMPLETE.


- GENERAL NOTES:**
- A. CONTRACTOR SHALL SCHEDULE SHUTDOWN AND REMOVAL OF CHILLER WITH VA COR AND RADIOLOGY PERSONNEL. PRIOR TO SHUTDOWN OF EQUIPMENT, MRI EQUIPMENT SHALL BE PLACED INTO EMERGENCY DOMESTIC WATER BACK-UP OPERATION.
  - B. PRIOR TO SHUTDOWN OF EQUIPMENT, CONTRACTOR SHALL HAVE NEW PROCESS CHILLED WATER SUPPLY/RETURN LINES ROUTED TO POINT OF CONNECTION. PIPING SHALL BE PREPARED (FLUSHED/CLEANED/TESTED) FOR CONNECTION TO MRI EQUIPMENT PRIOR TO CHILLER SHUTDOWN.
  - C. PATCH ROOF OPENINGS TO MATCH EXISTING. CONTRACTOR SHALL MAINTAIN ROOF WARRANTY.

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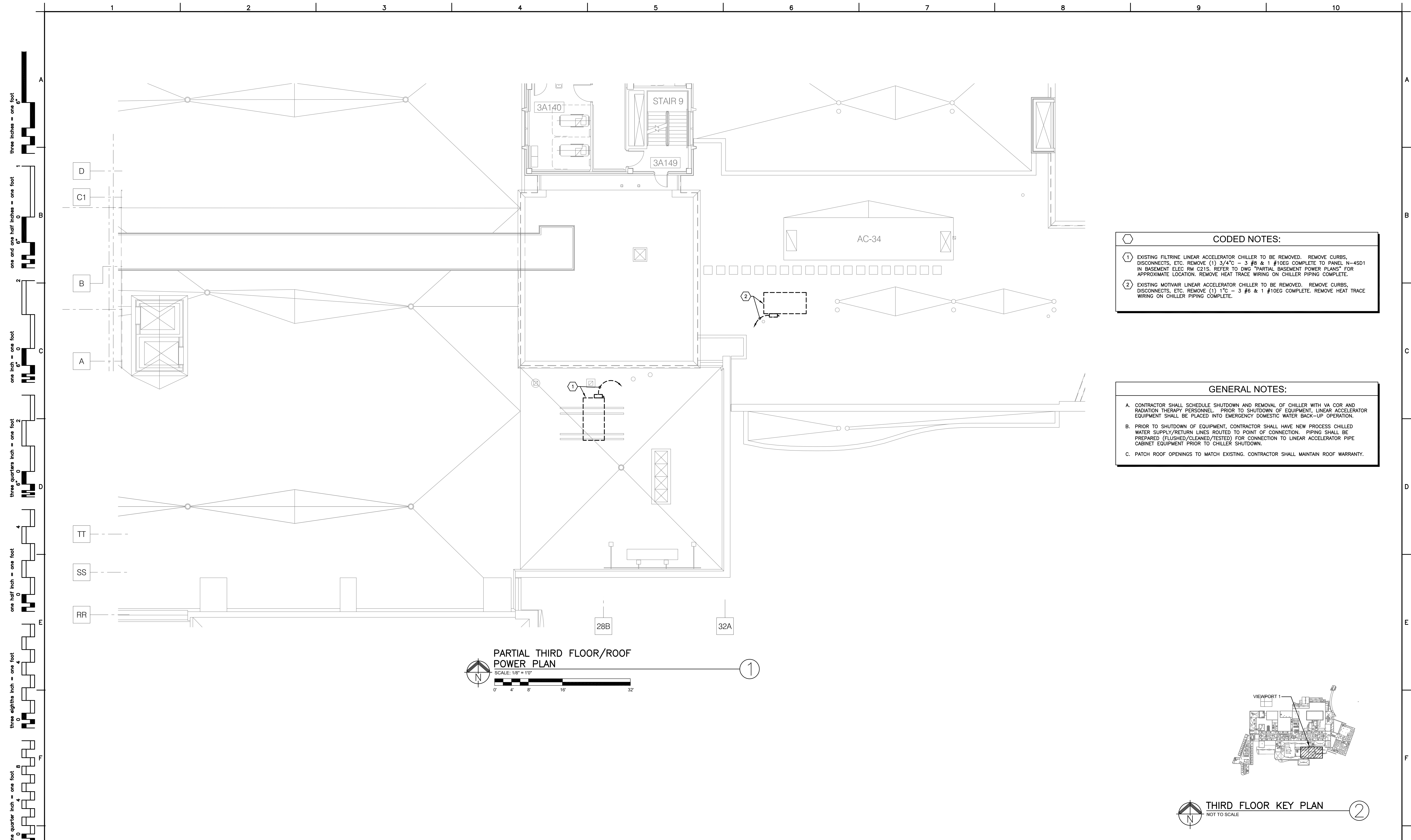
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Final Construction Documents		04-03-15	<b>CONSULTANTS:</b>		<b>ARCHITECT/ENGINEER:</b>	<p>FREDRICK, FREDRICK &amp; HELLER ENGINEERS, INC. 872 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL: (440) 546-9898 FAX: (440) 546-9899</p>	Drawing Title		Project Title		Project Number		<b>Office of Facilities Management</b>
		PARTIAL SECOND FLOOR/ROOF POWER PLAN					PROVIDE PROCESS LOOP TIE-INS		541-15-203				
									Building Number				
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									Drawing Number				
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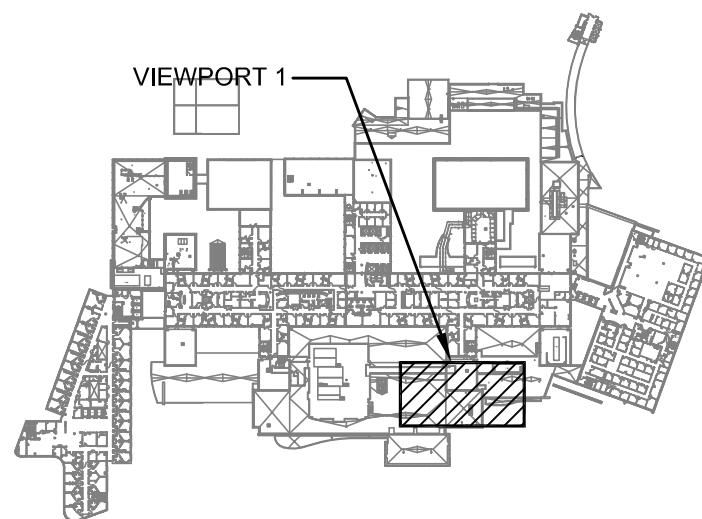
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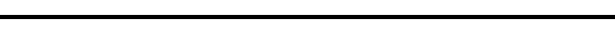
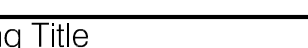
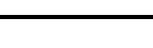
- CODED NOTES:**
- 1 EXISTING FILTRINE LINEAR ACCELERATOR CHILLER TO BE REMOVED. REMOVE CURBS, DISCONNECTS, ETC. REMOVE (1) 3/4" - 3 #8 & 1 #10EG COMPLETE TO PANEL N-4SD1 IN BASEMENT ELEC RM C21S. REFER TO DWG "PARTIAL BASEMENT POWER PLANS" FOR APPROXIMATE LOCATION. REMOVE HEAT TRACE WIRING ON CHILLER PIPING COMPLETE.
  - 2 EXISTING MOTVAIR LINEAR ACCELERATOR CHILLER TO BE REMOVED. REMOVE CURBS, DISCONNECTS, ETC. REMOVE (1) 1" - 3 #6 & 1 #10EG COMPLETE. REMOVE HEAT TRACE WIRING ON CHILLER PIPING COMPLETE.

- GENERAL NOTES:**
- A. CONTRACTOR SHALL SCHEDULE SHUTDOWN AND REMOVAL OF CHILLER WITH VA COR AND RADIATION THERAPY PERSONNEL. PRIOR TO SHUTDOWN OF EQUIPMENT, LINEAR ACCELERATOR EQUIPMENT SHALL BE PLACED INTO EMERGENCY DOMESTIC WATER BACK-UP OPERATION.
  - B. PRIOR TO SHUTDOWN OF EQUIPMENT, CONTRACTOR SHALL HAVE NEW PROCESS CHILLED WATER SUPPLY/RETURN LINES ROUTED TO POINT OF CONNECTION. PIPING SHALL BE PREPARED (FLUSHED/CLEANED/TESTED) FOR CONNECTION TO LINEAR ACCELERATOR PIPE CABINET EQUIPMENT PRIOR TO CHILLER SHUTDOWN.
  - C. PATCH ROOF OPENINGS TO MATCH EXISTING. CONTRACTOR SHALL MAINTAIN ROOF WARRANTY.



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Final Construction Documents		04-03-15	<b>CONSULTANTS:</b>		<b>ARCHITECT/ENGINEER:</b>	 FREDRICK, FREDRICK & HELLER ENGINEERS, INC. 672 EAST ROYALTON ROAD BROADVIEW HTS., OHIO 44147 TEL: (440) 546-9888 FAX: (440) 546-9899	Drawing Title		Project Title		Project Number		<b>Office of Facilities Management</b>	
							<b>PARTIAL THIRD FLOOR/ROOF POWER PLAN</b>		<b>PROVIDE PROCESS LOOP TIE-INS</b>		541-15-203			
											Building Number			
											1			
											Drawing Number			
										<b>1-E5</b>		 Department of Veterans Affairs		
										Dwg. of				
<b>Revisions:</b>		<b>Date</b>						Approved: Project Director		Location				
										<b>VAMC - WADE PARK</b>				
								Date		Checked		Drawn		
								04-03-15		<b>MPL</b>		<b>TWM</b>		